

REMARKS

This application has been carefully reviewed in light of the Office Action dated March 9, 2006. Claims 1 to 7 are pending in the application, of which Claim 1 is the sole independent claim. Reconsideration and further examination are respectfully requested.

Claim 3 was objected to for an informality. Claim 3 having been amended herein in accordance with the Examiner's suggestion, withdrawal of the objection of Claim 3 is respectfully requested.

Claims 1 to 3, 5 and 6 were rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,124,888 (Terada). Claims 4 and 7 were rejected under 35 U.S.C. § 103(a) over Terada. Reconsideration and withdrawal of this rejection are respectfully requested.

Turning to specific claim language, amended independent Claim 1 is directed to an image processing apparatus which includes a sensor including a plurality of pixels each including a light receiving element, and a scanning circuit for reading out signals in time sequence from the plurality of pixels; and a drive circuit which supplies pulses for driving the scanning circuit. The drive circuit is so arranged to drive the scanning circuit in different read-out modes so that the scanning circuit supplies a first pulse to each pixel in the read-out mode of a first resolution, and supplies the first pulse to the pixel to be read out while supplying a second pulse smaller than the first pulse to a pixel to be thinned out in the read-out mode of a second resolution lower than the first resolution.

Included in the features of Claim 1 is an image processing apparatus comprising a drive circuit which supplies pulses for driving a scanning circuit. The drive circuit is arranged so that the drive circuit drives a scanning circuit in different read-out modes such that said scanning circuit supplies a first pulse to each pixel in a read-out mode of a first resolution, and supplies the first pulse to the pixel to be read out while supplying a second pulse smaller than the first pulse to a pixel to be thinned out, in a read-out mode of a second resolution lower than the first resolution. That is, the present invention supplies the different reading pulses to both a selected pixel (which is to be read out) and a non-selected pixel (which is to be thinned out) in the read-out mode of the second resolution. In other words, in the second resolution read-out mode, the present invention also supplies the read-out pulse to the pixel to be thinned out, for a short reading period, while a long reading period pulse is supplied to the pixel selected to be read out. Therefore, according to the present invention, a sensor chip can attain selection and non-selection of the pixels using only different widths of the read-out pulses, and therefore change of resolution can be easily attained by a control signal externally supplied to a sensor unit.

In contrast, the above-described features of Claim 1 are not taught by Terada. Terada discloses an image pickup apparatus which reads out image information with thinning-out (skipping) of horizontal lines, as shown in Fig.26. Specifically, the apparatus disclosed by Terada controls selection and non-selection (skip) of the horizontal line using combination of pulses FV1 and FSRn, supplied during a horizontal blanking (HBL) period. In this connection, the Office Action, refers to Figs.2F and 2G, for example, to argue that Terada discloses long and short pulses. However, Terada fails to teach the

different read-out modes of different resolutions, as featured in amended independent Claim 1. In addition, in each of Figs. 2 and 3 of Terada, the short pulse is supplied in the HBL period to skip the predetermined horizontal line (odd or even) and this pulse therefore is not a pulse which determines the reading period. The reference of Terada thus fails to teach the drive circuit featured in amended independent Claim 1. To see that this is indeed the case, an apparatus in accordance with the Claim 1 does not require a level mixing unit 13 as shown in Fig.5 of Terada nor the selection switch 3 in Fig.4 of Terada, as the apparatus uses only the read-out pulses of different widths to determine selection and non-selection of pixels.

In light of the deficiencies of Terada as discussed above, Applicant submits that amended independent Claim 1 is now in condition for allowance and respectfully requests same.

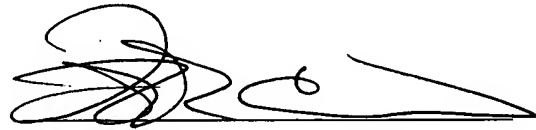
The other claims in this application are each dependent from Claim 1 discussed above and are, therefore, believed allowable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, individual consideration of each dependent claim on its own merits is respectfully requested.

The other pending claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicant's undersigned attorney may be reached in our Costa Mesa, CA office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Frank L. Cire', with a long horizontal line extending to the right.

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